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| 10/789,210 | 02/27/2004 | Thomas J. Plona | 26.0273 US | 9128 |

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| EXAMINER | |
|---|---|
| HUGHES, SCOTT A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3663 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/789,210 | PLONA ET AL. | |
| | Examiner | Art Unit | |
| | SCOTT A. HUGHES | 3663 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *29 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *74 and 80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *74 and 80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments and amendments filed 1/29/2009 have been fully considered but they are not persuasive.

Applicant argues that the Kimball and Bose references do not teach that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data. Applicant argues that support for this amendment to the claims can be found in paragraph 42 and Figs. 5A-5C of the present application. However, a search of paragraph 42 and Figs. 5A-5C contains no mention of evaluation by bandwidth. Paragraph 42 of applicant's specification discusses obtaining an understanding of homogeneity/inhomogeneity from studying the dispersion curves of Figs. 5A-5C. Paragraph 42 makes no mention of bandwidth, and does not state that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data. A search of the rest of applicant's specification also did not show support for the amendment that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data. Therefore, this amendment to the claims fails to comply with the written description requirement because the amended limitation contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Although paragraph 43 of applicant's specification states that the width of slowness bands in an SFA projection log can be used to evaluate characteristics, this is not the same as the claim language which states that the characteristics are evaluated by bandwidth. Slowness bands are not the same as bandwidth, which relates to frequency. Applicant has further not described the slowness bands as being a bandwidth in the specification.

For the purposes of this action, the limitation will be broadly interpreted as requiring that the homogeneous and inhomogeneous characteristics be evaluated using a frequency range of the dispersion curve data.

Applicant's argument that Bose does not teach that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data are not persuasive. Bose teaches that the dispersion curves are looked at in different frequency ranges (low and high frequencies), or bandwidths, to determine the characteristics of the borehole and surrounding formation including whether the formation is homogeneous or inhomogeneous (Columns 8-10). Further, the Figures in Bose show that the dispersion curve data is looked at over a bandwidth of frequencies, as frequency is one of the axes in Figs. 8-14B.

Applicant's arguments are therefore not persuasive.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 74 and 80 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant argues that support for this amendment to the claims can be found in paragraph 42 and Figs. 5A-5C of the present application. However, a search of paragraph 42 and Figs. 5A-5C contains no mention of evaluation by bandwidth. Paragraph 42 of applicant's specification discusses obtaining an understanding of homogeneity/inhomogeneity from studying the dispersion curves of Figs. 5A-5C. Paragraph 42 makes no mention of bandwidth, and does not state that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data. A search of the rest of applicant's specification also did not show support for the amendment that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data. Therefore, this amendment to the claims fails to comply with the written description requirement because the amended limitation contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball in view of Bose.

With regard to claim 74, Kimball discloses a method displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses acquiring sonic data at a plurality of depths in a borehole (Figs. 1, 6) (Column 4, Line 35 to Column 5, Line 40). Kimball discloses processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth (Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Columns 11-14; Column 15 Line 6 to Column 16, Line 10). Kimball discloses displaying a projection log of dispersion curve data for each depth versus depth (Figs. 3a,b; 4-6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 14 Line 23 to Column 16, Line 10). Kimball does not disclose that display includes homogeneous and inhomogeneous characteristics of the dispersion curve data. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve data (Fig. 17) (Columns 9-10). Bose teaches that the homogeneous and inhomogeneous characteristics are evaluated by a bandwidth of the dispersion curve data (Figs. 8-14B)

(Columns 8-10). It would have been obvious to modify Kimball to include information in the display from sonic logging that include homogenous and inhomogeneous characteristics of the dispersion curve data in order to look for damage to the formation near the borehole.

With regard to claim 80, Kimball discloses that the dispersion curve data for each depth are projected onto a slowness axis (Column 7, Lines 25-55; Columns 13-15) (Figs. 3A-6).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT A. HUGHES whose telephone number is (571)272-6983. The examiner can normally be reached on M-F 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. A. H./
Examiner, Art Unit 3663

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663